

## ABSTRACT OF THE DISCLOSURE

The present invention is a microarray having a plurality of subarrays with a hydrophobic barrier that defines each subarray of the microarray, and a method for preparing such a microarray. The hydrophobic barrier is prepared using a microarray synthesis instrument, where NPPOC photoprotected and other hydrophobic group-bearing phosphoramidites are coupled to the microarray using light from a digital micromirror to direct formation of the hydrophobic barrier. The method utilizes hydrophobicity, a well-established property, of conventional phosphoramidite protecting groups for an entirely new application, the synthesis of hydrophobic barriers on microarrays.